Arnold

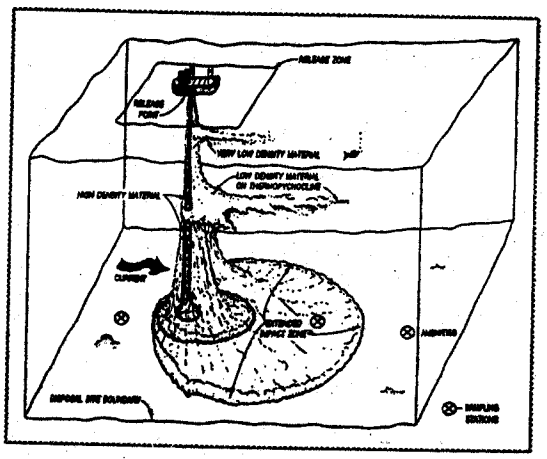
MAY 1997

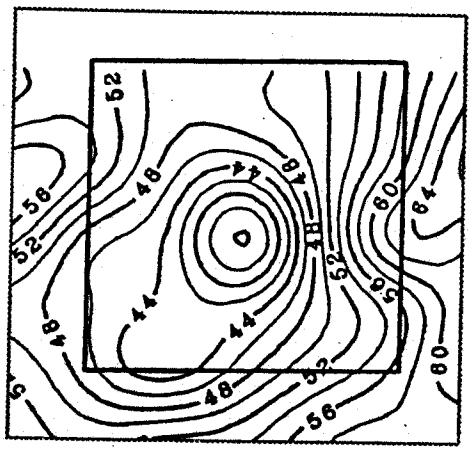
EPA

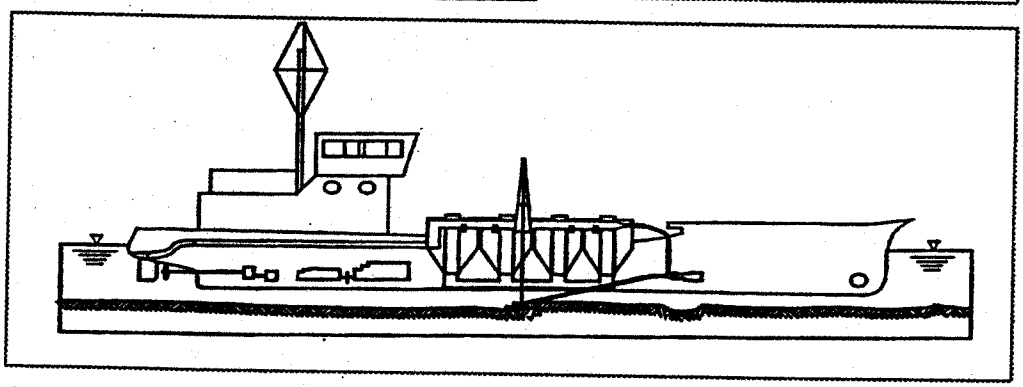
U.S. Army Corps of Engineers

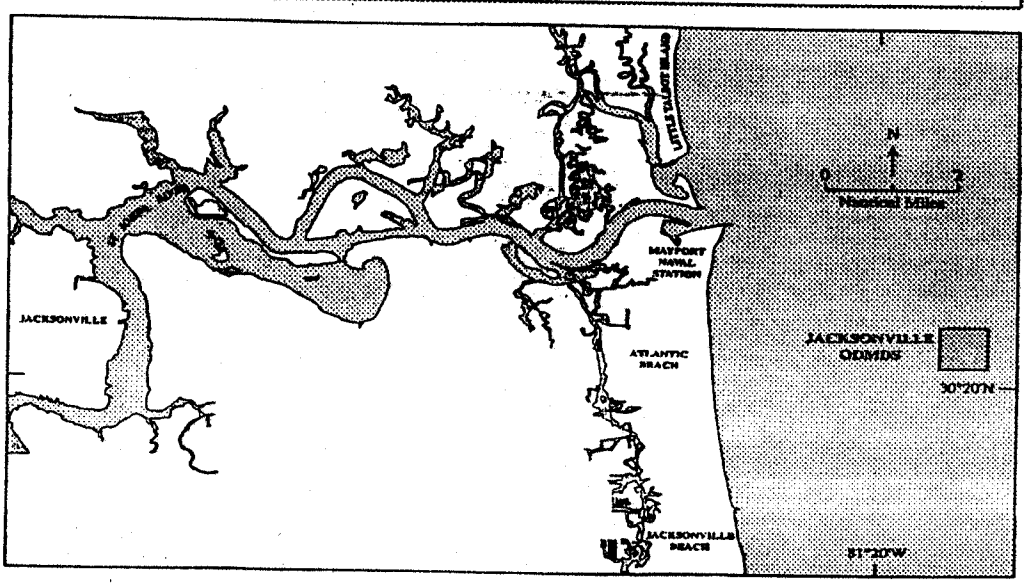
JACKSONVILLE OCEAN DREDGED MATERIAL DISPOSAL SITE

SITE MANAGEMENT AND MONITORING PLAN









The following Site Management and Monitoring Plan for the Jacksonville ODMDS has been developed and agreed to pursuant to the Water Resources Development Act Amendments of 1992 (WRDA 92) to the Marine Protection, Research, and Sanctuaries Act of 1972 for the management and monitoring of ocean disposal activities, as resources allow, by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers.

15 Jun 97

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This plan is effective from the date of signature for a period not to exceed 10 years. The plan shall be reviewed and revised more frequently if site use and conditions at site indicate a need for revision.

JACKSONVILLE OCEAN DREDGED MATERIAL DISPOSAL SITE (ODMDS) SITE MANAGEMENT AND MONITORING PLAN

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INTRODUCTION

It is the responsibility of the U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (COE) under the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 to manage and monitor each of the Ocean Dredged Material Disposal Sites (ODMDSs) designated by the EPA pursuant to Section 102 of MPRSA. MPRSA, the Water Resources Development Act (WRDA) of 1992, and a Memorandum of Agreement between EPA and COE require the development of a site management and monitoring plan (SMMP) to specifically address the disposal of dredged material at the Jacksonville ODMDS. Upon finalization of the SMMP, SMMP provisions shall be requirements for all dredged material disposal activities at the site. All Section 103 (MPRSA) ocean disposal permits or evaluations shall be conditioned as necessary to assure consistency with the SMMP.

Site Management and Monitoring Plan Team. An interagency SMMP team has been established to assist EPA and COE in finalizing this SMMP. The team consists of the following agencies and their respective representatives:

Jacksonville District Corps of Engineers

State of Florida

EPA Region IV

U.S. Navy

Port of Jacksonville

National Marine Fisheries Service (NMFS)

Other agencies such as the U.S. Coast Guard and the Fish and Wildlife Service (FWS) will be asked to participate where appropriate. The SMMP team will assist EPA in evaluating existing monitoring data, the type of disposal (i.e., O&M vs. construction), the type of material (i.e., sand vs. mud), location of placement within the ODMDS and quantity of material. The team will assist EPA and COE on deciding on appropriate monitoring techniques, the level of monitoring, the significance of results and potential management options.

SITE MANAGEMENT

Section 228.3 of the Ocean Dumping Regulations (40 CFR 220-229) states: "Management of a site consists of regulating times, rates, and methods of disposal and quantities and types of materials disposed of; developing and maintaining effective ambient monitoring programs for the site; conducting disposal site evaluation studies; and recommending modifications in site use and/or designation." This plan may be modified if it is determined that such changes are warranted as a result of information obtained during the monitoring process.

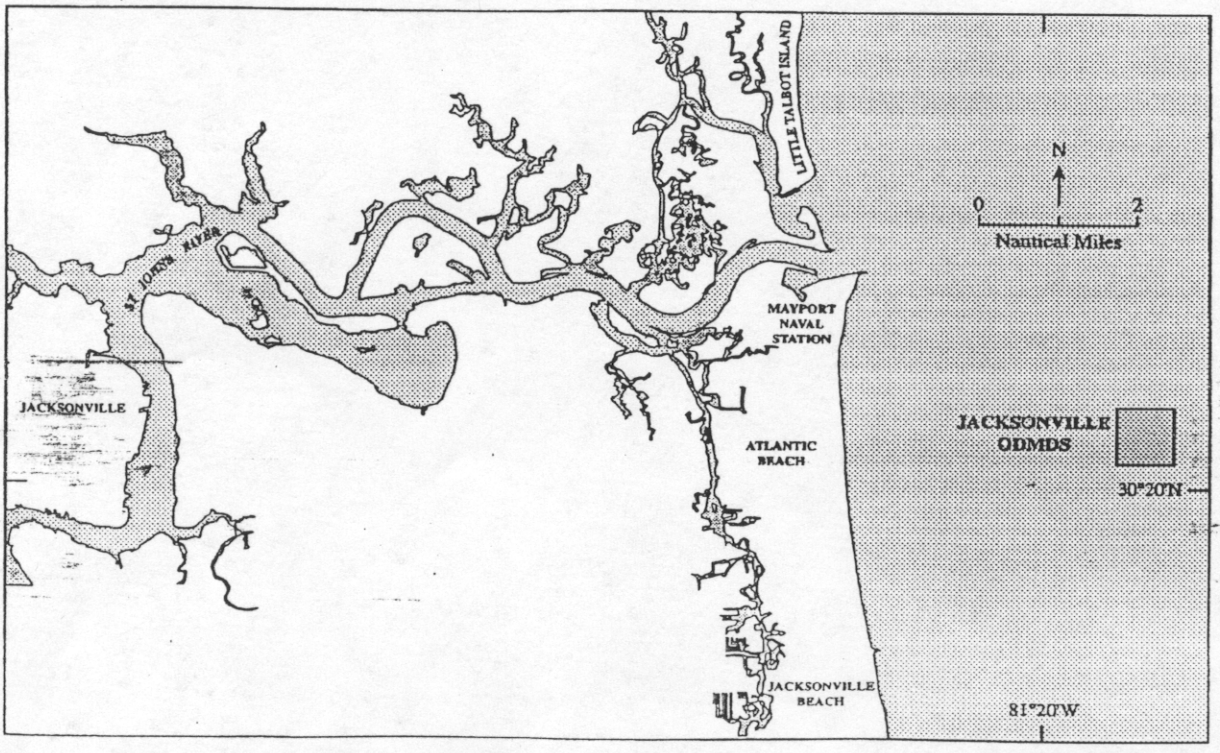
Disposal Site Characteristics

The Jacksonville ODMDS is a 1 nmi by 1 nmi square area centered at the coordinates 30° 21'00"N latitude and 81°18'00"W longitude. The corner coordinates are as follows:

30°21'30"N	81°18'34"W
30°21'30"N	81°17'26"W
30°20'30"N	81°17'26"W
30°20'30"N	81°18'34"W

The site is 4.5 nmi offshore, has an average depth of 14 meters (46 feet), and an area of 1 nmi^2.

Figure 1. Jacksonville ODMDS Location Map



Management Objectives. There are three primary objectives in the management of each ODMDS. These are:

- o Protection of the marine environment;
- o Beneficial use of dredged material whenever practical; and
- o Documentation of disposal activities at the ODMDS.

The following sections provide the framework for meeting these objectives to the extent possible.

Material Volumes. The Jacksonville ODMDS and vicinity has been used for the ocean disposal of dredged material since 1952. Material disposed prior to 1970 was disposed at a site centered 0.5 nautical miles east of the Jacksonville ODMDS. Table 1 outlines the history of disposal of material from Jacksonville and Mayport Harbors. Annual and cumulative disposal volumes are shown in Figures 2 and 3.

The Jacksonville District Corps of Engineers has projected disposal of 1,100,000 cubic yards of dredged material every two years from Mayport Harbor maintenance dredging. Additional potential projects utilizing the ODMDS include the Jacksonville Harbor Deepening project in the year 2000 and expansion of the Mayport Naval Station to accommodate CVN Homeporting beginning in the year 2008. CVN Homeporting would require disposal of approximately 5.7 million cubic yards of dredged material.

The capacity of the Jacksonville ODMDS has yet to be determined. The COE will undertake a study to determine the capacity of the ODMDS. Until the study is completed, use of the ODMDS will be temporary restricted to 2 million cubic yards per year. This restriction is based on maximum historical uses of the ODMDS.

Table 1. Volume of Dredged Material Placed in the Jacksonville ODMDS

	DREDGED MATERIAL QUANTITY - CUBIC YARDS		
YEAR	JACKSONVILLE HARBOR	MAYPORT	YEAR TOTAL
1952	247,000		247,000
1953	444,000		444,000
1954	334,252	415,043	749,295
1956	197,500		197,500
1960		2,046,901	2,046,901
1961	746,586		746,586
1962		11,826	11,826
1963	600,675	557,311	1,157,986
1965	754,883		754,883
1967	376,992		376,992
1968	759,706		759,706
1969		961,916	961,916
1972		2,006,504	2,006,504
1974		968,310	968,310
1976	73,000		73,000
1977	1,567,545		1,567,545
1978		1,789,700	1,789,700
1979		84,330	84,330
1980	1,077,562		1,077,562
1985	6,600		6,600
1952-1985	7,186,301	8,841,841	16,028,142

Figure 2. Annual Volume of Dredged Material Placed at the Jacksonville ODMDS

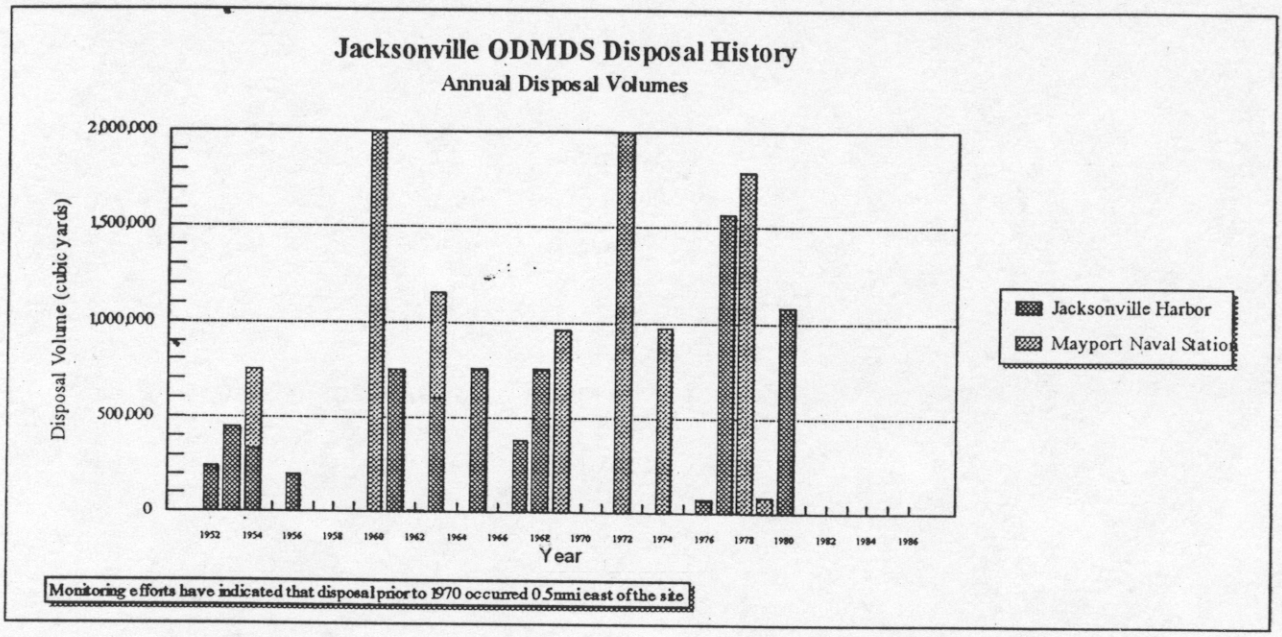
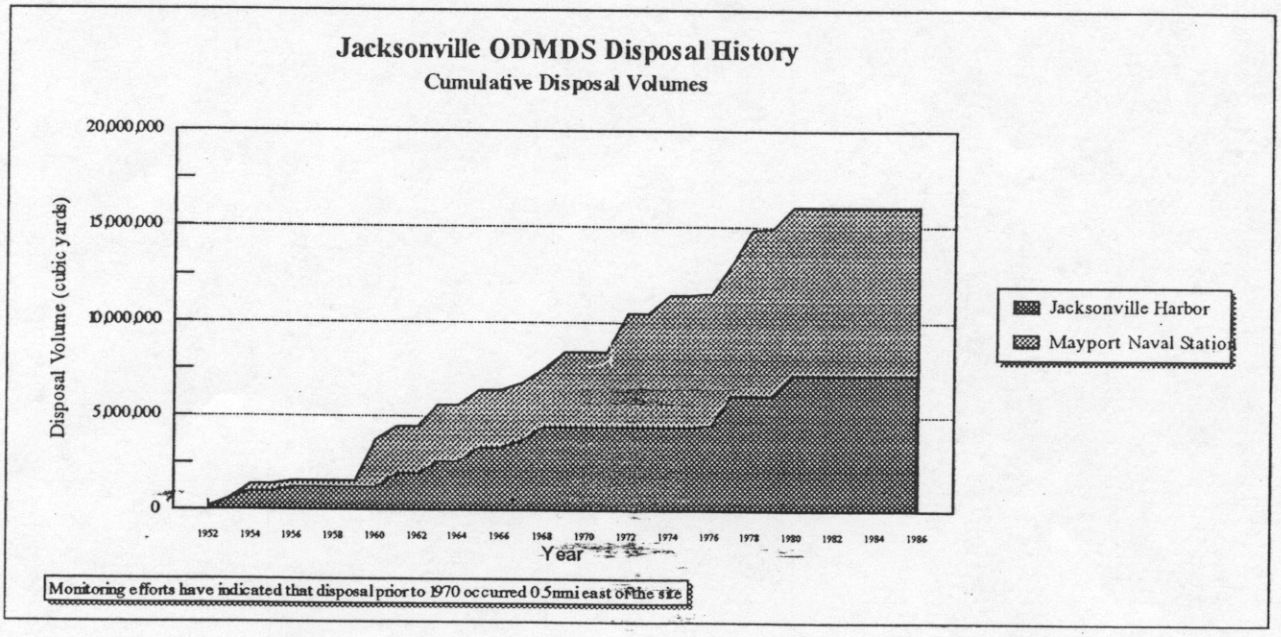


Figure 3. Volume of Dredged Material Placed at the Jacksonville ODMDS



Material Suitability. The composition of dredged material dumped at the Jacksonville ODMDS has been extremely variable. The majority of the dredged material destined for disposal in the ODMDS is expected to be composed of silt (10% to 60%) and clay (10% to 30%). Disposal of gravel and rock has occurred in association with the Jacksonville Harbor Deepening Project, completed in 1977. Sediments dredged to maintain the Entrance Channel and certain reaches of the St. Johns River downstream from Jacksonville are predominantly fine- to medium-grained sands and are consequently typically used for beach renourishment projects and not disposed in the Jacksonville ODMDS. Sediments from Mayport Harbor are predominantly silts and clays.

The disposition of any significant quantities of beach compatible sand from future projects will be determined during permitting activities for any such projects. It is expected that the State of Florida will exercise its authority and responsibility, regarding beach nourishment, to the full extent during any future permitting activities. Utilization of any significant quantities of beach compatible dredged material for beach nourishment is strongly encouraged and supported by EPA. Disposal of non-beach quality sand should be planned to allow the material to be placed so that it will be within or accessible to the sand-sharing system, to the maximum extent practical, and following the provisions of the Clean Water Act. Disposal of coarser material, such as rubble, should be coordinated with the State of Florida and EPA to avoid unintended impacts in the ODMDS and to promote possible beneficial uses of the material.

In addition, the suitability of dredged material for ocean disposal must be verified by the COE and agreed to by EPA prior to disposal. Verification will be valid for three years from the time last verified with the option of a one time two year extension. Verification will involve: 1) a case-specific evaluation against the exclusion criteria (40 CFR 227.13(b)), 2) a determination of the necessity for bioassay (toxicity and bioaccumulation) testing for non-excluded material based on the potential for contamination of the sediment since last tested, and 3) carrying out the testing (where needed) and determining that the non-excluded, tested material is suitable for ocean disposal.

Documentation of verification will be completed prior to use of the site. Documentation for material suitability for dredging events proposed for ocean disposal more than 5 years since last verified will be a new 103 evaluation and public notice. Documentation for material suitability for dredging events proposed for ocean disposal less than 5 years but more than 3 years since last verified will be an exchange of letters between the COE and EPA.

Should EPA conclude that reasonable potential exists for contamination to have occurred, acceptable testing will be completed prior to use of the site. Testing procedures to be used will be those delineated in the 1991 EPA/COE Dredged Material Testing Manual and 1992 Regional Implementation Manual. This includes how dredging operations will be subdivided into project segments for sampling and analysis. Only material determined to be suitable through the verification process by the COE and EPA will be placed at the Jacksonville ODMDS.

Time of disposal. At present no restrictions have been determined to be necessary for disposal related to seasonal variations in ocean current or biotic activity. As monitoring results are compiled, should any such restrictions appear necessary, disposal activities will be scheduled so as to avoid adverse impacts. Between December 1 and March 31 monitoring and precautions necessary to protect whales, as described in the next paragraph, are required. Additionally, if new information indicates that endangered or threatened species are being adversely impacted, restrictions may be incurred.

Disposal Technique. No specific disposal technique is required for this site. However, in order to protect whales, NMFS requires monitoring by endangered species observers with at-sea large whale identification experience to conduct daytime observations for whales between December 1 and March 31. During daylight hours, the dredge operator must take necessary precautions to avoid whales. During evening hours or when there is limited visibility due to fog or sea states of greater than Beaufort 3, the vessel must slow down to 5 knots or less when traversing between areas if whales have been spotted within 15nm of the vessel's path within the previous 24 hours. In addition, the dredge operator will maintain a 500 yard buffer zone between the vessel and any whale.

Additionally, standard surveillance and evasive measures to protect sea turtles and marine mammals shall be employed during all disposal operations at the ODMDS.

Disposal Location. Until completion of the capacity study, disposal should occur within 1,500 feet of the center of the Jacksonville ODMDS. This release zone will be modified based on results from the capacity study and post-disposal bathymetric surveys.

Permit and Contract Conditions. The disposal monitoring and post-disposal monitoring requirements described under Site Monitoring will be included with the managment requirements described in this section as permit conditions on all MPRSA Section 103 permits and will be incorporated in the contract language for all federal projects. A summary of the management and monitoring requirements to be included are listed in Table 2.

Table 2. Summary of Permit and Contract Conditions

Condition	Reference
Dredged Material Suitability and Term of Verification	Jacksonville ODMDS SMMP page 6 Regional Implementation Manual
Disposal Zone	Jacksonville ODMDS SMMP page 7
Right Whale Avoidance	Jacksonville ODMDS SMMP page 7
Pre and Post Bathymetric Surveys	Jacksonville ODMDS SMMP page 8 and 11
Disposal Monitoring	Jacksonville ODMDS SMMP page 11
Reporting Requirements	Jacksonville ODMDS SMMP page 17

SITE MONITORING

The MPRSA establishes the need for including a monitoring program as part of the Site Management Plan. Site monitoring is conducted to ensure the environmental integrity of a disposal site and the areas surrounding the site and to verify compliance with the site designation criteria, any special management conditions, and with permit requirements. Monitoring programs should be flexible, cost effective, and based on scientifically sound procedures and methods to meet site-specific monitoring needs. The intent of the program is to provide the following:

(1) Information indicating whether the disposal activities are occurring in compliance with the permit and site restrictions; and/or

(2) Information concerning the short-term and long-term environmental impacts of the disposal; and/or

(3) Information indicating the short-term and long-term fate of materials disposed of in the marine environment.

The main purpose of a disposal site monitoring program is to determine whether dredged material site management practices, including disposal operations, at the site need to be changed to avoid significant adverse impacts.

Baseline Monitoring. Disposal has occurred at the present site since 1952. Therefore, no true baseline information has or can be collected. The results of investigations presented in the designation EIS and subsequent surveys listed in Table 3 will serve as the main body of data for the monitoring of the impacts associated with the use of the Jacksonville ODMDS.

A bathymetric survey will be conducted by the COE or site user within three (3) months prior to dredging cycle or project disposal. Bathymetric surveys will be used to monitor the disposal mound to insure a navigation hazard is not produced, to assist in verification of material placement, to monitor bathymetry changes and trends and to insure that the site capacity is not exceeded, ie., the mound does not exceed the site boundaries. The number and length of transects required will be sufficient to encompass the ODMDS and a 0.25 nautical mile wide area around the site. The surveys will be taken along lines spaced at 500-foot intervals or less. Accuracy of the surveys will be +/- 0.5 feet. Horizontal location of the survey lines and depth sounding points will be determined by an automated positioning system utilizing either a microwave line of site system or differential global positioning system. The vertical datum shall be mean lower low water (m.l.l.w.) and the horizontal datum Florida State Plane or Geographic (NAD 1983 or NAD 1927). No additional pre-disposal monitoring at this site is required.

Table 3. Surveys Conducted at the Jacksonville ODMDS

Survey Title	Conducted by	Date	Purpose	Conclusion
Environmental Investigation of a Dredge Spoil Disposal Site near Mayport, Florida	Naval Oceanographic Office	1972-1973	Evaluation of environmental effects of disposal.	No permanent impairment of the benthic biological community when relative abundance and diversity of benthic macro fauna in the ODMDS are compared to control stations.
Environmental Investigation of a Dredged Material Disposal Site Near Mayport, Florida	Naval Oceanographic Office	1977-1978	Effects (sediment chemistry, bathymetry) of disposal of material from Mayport Harbor.	Significant change in bathymetry (depth decreased from 43 feet to 34 feet), noticed movement of material to the south, and significant difference found in heavy metal concentration in sediments inside the site than outside.
Disposal Site Monitoring at the Jacksonville ODMDS	U.S. EPA	1986	Benthic infaunal survey.	No significant benthic infaunal difference between control and disposal stations.
Jacksonville ODMDS Sidescan Sonar Survey	U.S. EPA Region 4	March, 1995	Look for presence of natural resources and presence of man made obstructions on the bottom.	No natural resources found; significant amounts of man made obstructions in north half of site and to the north of the site.
Post disposal Areal Mapping of Sediment Chemistry at the Jacksonville ODMDS	U.S. EPA Region 4 and Center for Applied Isotope Studies	March, 1995	Conduct sediment mapping of site to determine location of dredged material and to provide baseline for future surveys.	Two primary areas containing fine-grained sand associated with dredged material were found: one in the east-central sector of the ODMDS and the other along the southernmost portion of the survey area (½ mi south of the site). One area of coarse grained dredged material was found consisting of a defined mound within the ODMDS boundaries.

Disposal Monitoring. For all disposal activities, the dredging contractor will be required to prepare and operate under an approved electronic verification plan for all disposal operations. As part of this plan, the contractor will provide an automated system that will continuously track (1 to 5 minute intervals) the horizontal location and draft condition (vertical) of the disposal vessel from the point of dredging to the disposal area, and return to the point of dredging. Required digital data are as follows:

(a) Date;

(b) Time;

© Vessel Name;

(d) Dump Number;

(e) Map Number on which dump is plotted (if appropriate);

(f) Beginning and ending coordinates of the dredging area for each load (source of dredged material);

(g) Actual location (in degrees and minutes of longitude and latitude) at points of initiation and completion of disposal event;

(h) Brief description of material disposed;

(I) Volume of material disposed; and

(j) Disposal technique used.

This information shall be available to the COE on a daily basis.

Post Discharge Monitoring. As a follow-up to the pre-disposal bathymetric survey, the COE or other site user will conduct a bathymetric survey within 30 days after disposal project completion. The number of transects required will be the same as in the pre-disposal survey. Bathymetric survey results will be used to insure that unacceptable mounding is not occurring and to aid in environmental effects monitoring.

Material Tracking and Disposal Effects Monitoring. Surveys can be used to address possible changes in bathymetric, sedimentological, chemical, and biological aspects of the ODMDS and surrounding area as a result of the disposal of dredged material at the site.

Table 3 (Continued). Surveys Conducted at the Jacksonville ODMDS

Survey Title	Conducted by	Date	Purpose	Conclusion
Benthic Survey of the Jacksonville ODMDS	U.S. EPA Region 4	July, 1995	Baseline for future surveys.	Comparisons of the stations mean densities and mean number of taxa showed that the only significant differences observed are more likely to be related to the grain size distribution differences seen and not related to the presence or absence of disposed dredged material. Benthic community indices showed that all stations were extremely diverse with an equitable distribution of taxa when compared to known infaunal assemblages from the same general coastal region.
Sediment Chemistry Survey of the Jacksonville ODMDS	U.S. EPA Region 4	July, 1995	Baseline for future surveys.	In general, metal concentrations were higher within than outside the ODMDS. Concentrations were lower in 1995 than in 1978. Organics, Pesticides, and PCBs were not detected.

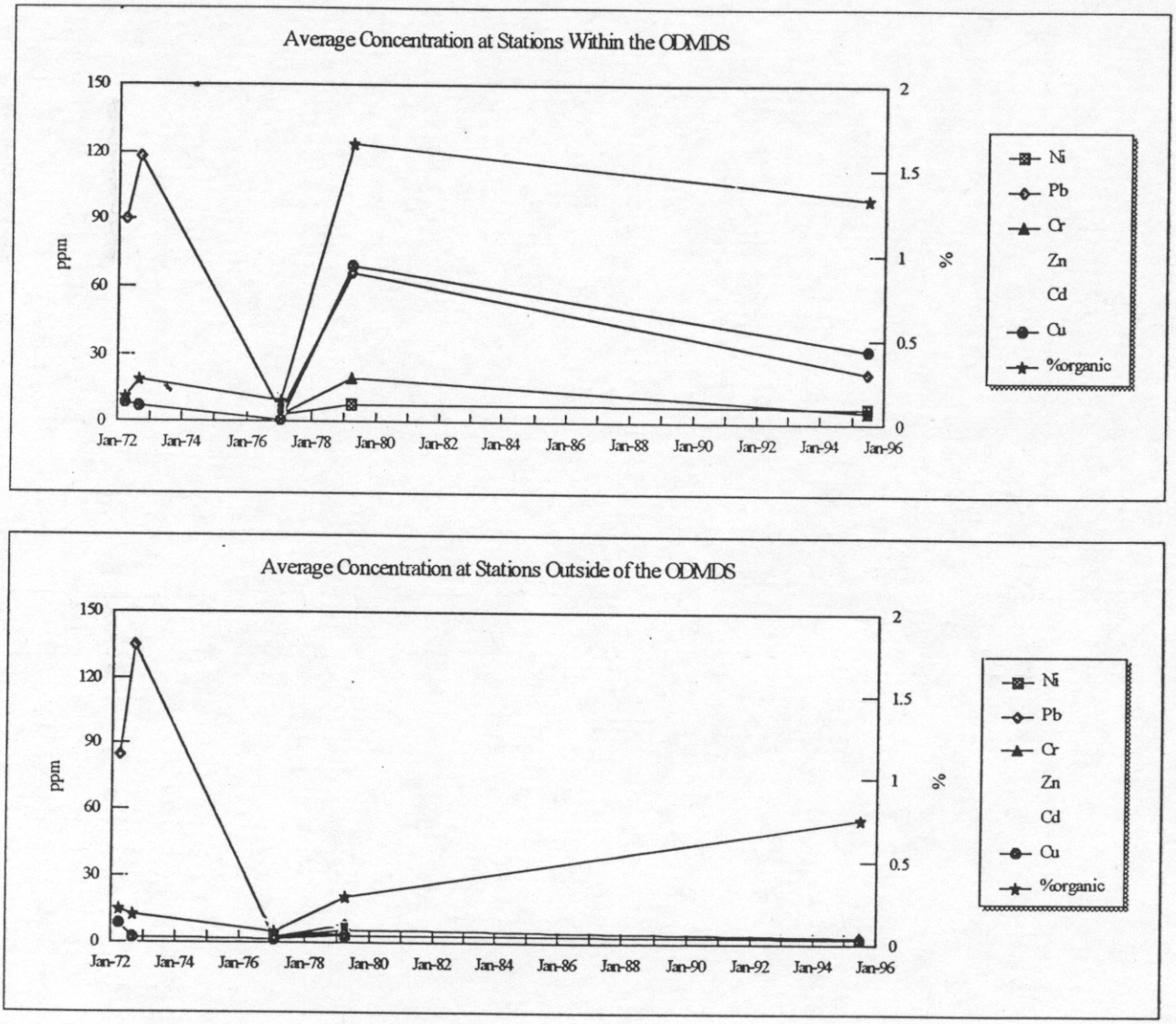
Summary of Results of Past Monitoring Surveys

Surveys conducted at the Jacksonville ODMDS are listed in Table 3. Monitoring activities during the 1970's indicated significant mounding occurring at the site and that a small amount of dredged material had been transported to the south, as demonstrated by bathymetric, physical, and chemical analyses of sediments. During the time period of these studies (1973-78), 4.4 million cubic yards was disposed at the site. Since that time, only 1.2 million cubic yards of material has been disposed at the site, with the last disposal occurring in 1985. Bathymetry results from the 1995 sediment mapping survey indicate a mound in the center of site of only slightly smaller dimensions than that measured in 1978. This indicates that some erosion of the mound is occurring. In addition, the 1995 sediment mapping survey indicated the presence of fine grained dredged material south of the site boundaries as did the 1978 study. Predominant currents in the area flow southwest in the fall and winter and northeast during spring and summer. Larger waves in the area are predominantly from the north and northeast and occur during fall and winter. It is possible that some southerly transport of dredged material occurs in the fall and winter due to wave induced resuspension.

Sediment analysis in the late 1970's showed higher concentrations of certain heavy metals (Ni, Cu, Zu, Pb, and Cr), Kjeldahl nitrogen and organic carbon in sediments within the disposal site versus outside the site. Sediment analysis as part of the 1995 benthic survey showed that in general this remains true. However, concentrations within the ODMDS have decreased since 1978. The average percentage of silts and clays at stations within the ODMDS exceeds that of stations outside the ODMDS, but has decreased both inside and outside of the ODMDS since 1978. Figure 3 shows that metal concentrations within the site have increased following significant ODMDS use in 1972 and 1978 followed by decreases. Metal concentrations outside the ODMDS remained low.

A benthic infaunal survey was conducted in 1986. Results of the macro infaunal community analysis indicated no difference between disposal and control stations and no difference could be found which could be related to active disposal. A second benthic infaunal survey was conducted in 1995. The sampling stations were composed primarily of sand, with silt/clay content of less than 10%. Station 4, in the center of the disposal pile, had the highest silt/clay fraction, and interesting also had the highest gravel fraction (@ 21 %). Comparisons of the stations mean densities and mean number of taxa showed that the only significant differences observed are more likely to be related to the grain size distribution differences seen and not related to the presence or absence of disposed dredged material. Benthic community indices showed that all stations were extremely diverse with an equitable distribution of taxa when compared to known infaunal assemblages from the same general coastal region. Numerical classification of the 12 stations tended to group the stations relative to the coarser grain size fractions. Results of this survey can be used as a new baseline for temporal effects within and near the site.

Figure 4. Jacksonville ODMDS Sediment Chemistry



A sidescan survey was conducted in March, 1995. Results of the survey showed the site and the area north of the site to be cluttered with various types of debris and artificial reef material. This is consistent with historical uses of the area. Although not designated as such, this site has historically been used as a disposal location in rough weather for artificial reef material destined for artificial reefs further offshore. Subsequent reconnaissance by divers identified biological resources near the center of the site. Based on visual observations these resources are associated with past disposal of construction material. A video survey was attempted at the site, but due to poor water clarity no data was collected.

Future Monitoring Surveys

Based on the type and volume of material disposed and impacts of concern, various monitoring surveys can be used to determine if and where the disposed material is moving, and what environmental effect the material is having on the site and adjacent areas.

At the current time, no nearby resources have been identified that are of concern for potential impact. Near shore shrimping grounds are located between the site and the coastline and both natural and artificial reefs are common on the mid-shelf east of the site. However, it has been determined that the disposal mound is relatively stable with possible southerly transport of material so that these areas should not be of concern. Sediment composition within the site may be altered as a result of disposal of clay and silty material on otherwise sandy sediments. Progressive transition to sediments containing a higher percentage of silt and clay is inevitable with continued use of the site. Changes in sediment composition will likely alter the benthic community structure. However, based on previous benthic studies, it is unlikely that permanent or long-term adverse impacts will result due to changes in sediment composition.

The Jacksonville ODMDS was used for the first time since 1985 during the winter of 1997. Dredged material from the maintenance dredging of Mayport Harbor was completed in February of 1997. Additional maintenance dredging of Mayport Harbor and disposal at the Jacksonville ODMDS is expected every two years. Bathymetric changes will be monitored by the site user and can be used to determine mound dimensions and location and any significant sediment transport. Immediately following completion of the 1997 dredging, a sediment mapping survey was conducted to provide post-disposal maps showing the distribution patterns of the surficial sediments on the sea floor according to their natural radioactivity and elemental content. This data will be compared to pre-disposal data collected in 1995 to identify the disposal mound. An additional sediment mapping survey is planned for 9 months to a year following dredged material disposal. Data from this survey will be used to identify changes in the distribution of dredge material as well as dredged material migration pathways emanating from disposal zones. Through such identification, biological monitoring stations can be specifically located with a high degree of confidence in dredged material and native sediments for biological impact assessment. Biological impact assessment is planned to immediately follow this sediment mapping survey.

A summary of the monitoring strategies for the Jacksonville ODMDS and thresholds for management actions are presented in Table 4. Should future disposal at the Jacksonville ODMDS result in unacceptable adverse impacts, further studies may be required to determine the persistence of these impacts, the extent of the impacts within the marine system, and/or possible means of mitigation. In addition, the management plan presented may require revision based on the outcome of any monitoring program.

Table 4. Jacksonville ODMDS Monitoring Strategies and Thresholds for Action

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Options	
						Threshold Not Exceeded	Threshold Exceeded
Site Capacity	Modeling with field verification/ calibration	COE/ Navy	Determine dispersiveness of the site	Prior to New Work Project	Maintenance Volumes exceed estimated capacity	Continue to use site without restrictions	-Restrict disposal volumes -Enlarge site or designate additional site
					New Work Volumes exceed estimated capacity	Continue to use site without restrictions	-Enlarge site or designate additional site for new work
Monitor Bathymetric Trends & Short Term Fate	Bathymetry	Site User	Determine the extent of the disposal mound and major bathymetric changes	Pre and post disposal	Disposal mound occurs outside ODMDS boundaries	Continue Monitoring	-Modify disposal method/placement -Restrict Disposal Volumes
Long Term Fate and Environmental Effects Monitoring	Sediment Mapping (Gamma/CS^3)	EPA	Determine areal influence of dredged material	Immediately following first disposal of new type of material and first year thereafter	Communities under the influence of dredged material outside the site have significant differences in diversity/ richness/biomass from those not under dredged material influence after one year recovery period.	Discontinue monitoring unless disposal quantities, type of material or frequency of use significantly changes	-Limit quantity of dredged material to prevent impacts outside boundaries -Create berms to restrict dredged material movement -Cease site use
	Benthic Survey	EPA	Determine impact of dredged material on benthic community	Coincident with second sediment mapping			

Table 4 (Continued). Jacksonville ODMDS Monitoring Strategies and Thresholds for Action

Goal	Technique	Sponsor	Rationale	Frequency	Threshold for Action	Management Options	
						Threshold Not Exceeded	Threshold Exceeded
Insure Safe Navigation Depth	Bathymetry	Site User	Determine height of mound and any excessive mounding	Pre and Post disposal	Mound height > -25 feet m.l.l.w.	Continue Monitoring	-Modify disposal method/placement -Restrict disposal volumes
Compliance	Disposal Site Use Records	Site User	-Insure management requirements are being met -To assist in site monitoring	Daily during the project	Disposal records required by SMMP are not submitted or are incomplete	Continue Monitoring	-Restrict site use until requirements are met
					Review of records indicates a dump occurred outside ODMDS boundary	Continue Monitoring	-Notify EPA Region 4/COE, and investigate why egregious dump(s) occurred. Take appropriate enforcement action.
					Review of records indicates a dump occurred in the ODMDS but not in target area	Continue Monitoring	-Direct placement to occur as specified.

Reporting and Data Formatting. The user will be required to prepare daily reports of operations and submit to the COE a monthly report of operations for each month or partial month's work. Disposal monitoring data shall be delivered to the COE on a weekly basis. The user is also required to notify the COE and the EPA within 24 hours if a violation of the permit and/or contract conditions related to MPRSA Section 103 or SMMP requirements occur during disposal operations.

Disposal summary reports shall be provided by the COE to EPA within 45 days after project completion. These should consist of dates of disposal, volume of disposal, approximate location of disposal and pre and post disposal bathymetric survey results in both hard and electronic formats. Other disposal monitoring data shall be made available upon request. In addition, EPA should be notified by the Corps of Engineers 15 days prior to the beginning of a dredging cycle or project disposal.

Material tracking, disposal effects monitoring and any other data collected shall be coordinated with and be provided to SMMP team members and federal and state agencies as appropriate. Data will be provided to other interested parties requesting such data to the extent possible. Data will be provided for all surveys in a report generated by the action agency. The report should indicate how the survey relates to the SMMP and previous surveys at the Jacksonville ODMDS and should provide data interpretations, conclusions, and recommendations, and should project the next phase of the SMMP.

MODIFICATION OF THE JACKSONVILLE ODMDS SMMP

Should the results of the monitoring surveys or valid reports from other sources indicate that continued use of the ODMDS would lead to unacceptable effects, then the ODMDS SMMP will be modified to mitigate the adverse impacts. The SMMP will be reviewed and revised if appropriate at a minimum of every ten years. The SMMP will be reviewed and updated as necessary if site use changes significantly. For example, the SMMP will be reviewed if the quantity or type of dredged material placed at the site changes significantly or if conditions at the site indicate a need for revision. It is proposed that the first review occur after the completion of the COE capacity study and the first Mayport maintenance dredging project.

REFERENCES

Fredette, Thomas J., Nelson, David A., Clausner, James E., and Anders, Fred J. 1990. *Guidelines for Physical and Biological Monitoring of Aquatic Dredged Material Disposal Sites*, Technical Report D-90-12, US Army Engineer Waterways Experiment Station, Vicksburg, MS.

Pequegnat, Willis E., Gallaway, Benny J., and Wright, Thomas D., 1990. *Revised Procedural Guide for Designation Surveys of Ocean Dredged Material Disposal Sites*, Technical Report D-90-8, US Army Engineer Waterways Experiment Station, Vicksburg, MS.

Little, Brenda J., C.S. Gordon, and D.K. Young. 1977. *Environmental Investigation of a Dredged Material Disposal Site Near Mayport, Florida -- First Interim Report.* Oceanography Division, Naval Oceanographic Laboratory, Naval Ocean Research and Development Activity, NSTL Station, MS.

Little, Brenda J., and Young, David K., 1978. *Environmental Investigation of a Dredged Material Disposal Site Near Mayport, Florida -- Final Report.* Oceanography Division, Naval Oceanographic Laboratory, Naval Ocean Research and Development Activity, NSTL Station, MS.

U.S. Department of the Navy. 1996. *Draft Programmatic Environmental Impact Statement to Evaluate Facilities Development Necessary to Support Potential Aircraft Carrier Homeporting at Naval Station Mayport, Florida,* March 1996. Department of the Navy Southern Division, Naval Facilities Engineering Command, Charleston, South Carolina.

U.S. Environmental Protection Agency (EPA). 1983. *Environmental Impact Statement (EIS) for Jacksonville Harbor, Florida Ocean Dredged Material Disposal Site Designation*, February 1983.

U.S. Environmental Protection Agency (EPA). 1987. *Benthic Community Characterization Study at the Jacksonville, Florida, ODMDS During April 1986*, May 27, 1987. Prepared by Barry A. Vittor & Associates, Inc. under contract to Battelle Ocean Sciences for U.S. EPA, Office of Marine and Estuarine Protection.

U.S. Environmental Protection Agency (EPA). 1996. *Postdisposal Areal Mapping of Sediment Chemistry at the Jacksonville, Florida ODMDS*, April 8, 1996. Prepared by Center for Applied Isotope Studies under contract to Battelle Ocean Sciences for U.S. EPA, Office of Wetlands, Oceans and Watersheds.

U.S. Environmental Protection Agency (EPA). 1996. *Jacksonville, Florida ODMDS Benthic Community Assessment,* October 1996. Prepared by Barry A. Vittor & Associates, Inc. for US Army Corps of Engineers Waterways Experiment Station Coastal Ecology Branch under an interagency agreement with Environmental Protection Agency Region 4.

U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, 1991. *Evaluation of Dredged Material Proposed for Ocean Disposal (Testing Manual)*, February 1991. Prepared by Environmental Protection Agency Office of Marine and Estuarine Protection and Department of Army United States Army Corps of Engineers under EPA Contract No. 68-C8-0105.

U.S. Environmental Protection Agency and U.S. Army Corps of Engineers, 1996. *Guidance Document for Development of Site Management Plans for Ocean Dredged Material Disposal Sites*, February 1996. Prepared by Environmental Protection Agency Office of Water and Department of Army United States Army Corps of Engineers.

U.S. Environmental Protection Agency Region 4 and U.S. Army Corps of Engineers South Atlantic Division, 1993. *Regional Implementation Manual Requirements and Procedures for Evaluation of the Ocean Disposal of Dredged Material in Southeastern Atlantic and Gulf Coastal Waters*, May 1993.

U.S. Naval Oceanographic Office. 1973. *Environmental Investigation of a Dredge Spoil Disposal Site Near Mayport, Florida*, NAVOCEANO Technical Note No. 6110-4-73. Physical Oceanography Division, Department of the Navy, Washington, D.C..